

REMARKS

Claims 1-32 are pending, and stand rejected under 35 U.S.C. §103(a).

Claims 4-5, stand rejected under 35 U.S.C. §112, second paragraph.

35 U.S.C. §112

Claims 4-5 stand rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner states that the nomenclature used in claims 4-5 to recite various alkoxyamines is vague and confusing because it is unclear where on the alkoxyamine the various claimed species substituents are attached or linked to. Claims 4 and 5 do properly define and distinctly claim the exact structure of the alkoxyamines. However, the compounds are named as esters, rather than having the alkoxyamine as the parent group. For instance, in the nomenclature “2-[N-*t*-butyl-N-(1-diethylphosphono-2,2-dimethylpropyl)-N-oxy]propionate” of claims 4 and 5, the “alkoxyamine” group is attached to the 2-position of the methyl propionate. One of skill in the art would recognize the listed structures as clear, and unambiguous.

35 U.S.C. §103(a)Senninger et al., in view of Kamath or Solomon et al.

Claims 1, 3, 9-14, 22, and 27-29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Senninger et al., US Patent Number 6,509,428, in view of Kamath, U.S. Patent Number 4,777,230 or Solomon et al., US Patent Number 4,581,429.

The Senninger reference fails to recognize the advantageous use of the specific dialkyl alkoxyamines or nitroxyl radicals for copolymers primarily formed from monomers of unsubstituted acrylic acid or esters thereof. The Senninger reference teaches away from Applicant's claims by exemplifying many copolymers that are not primarily formed from monomers of unsubstituted acrylic acid or esters thereof, and exemplifying only initiators not falling within Applicant's claims. Nor would one of skill

in the art arrive at Applicant's invention by routine experimentation, since the difficulty of forming a copolymer primarily formed from monomers of unsubstituted acrylic acid or esters thereof is not recognized as a result-effective factor.

The Senninger patent is owned by Atofina, an affiliate of Atofina Chemicals and under common ownership by TOTAL SA. Applicant is submitting herewith a Terminal Disclaimer over the Senninger reference.

The Kamath and Solomon references are secondary references cited to show that acrylic polymers may be used as coating compositions. Neither the Kamath or Solomon references describe controlled free radical polymerization using a N,N-dialkylamine initiator having one hydrogen atom on one carbon atom in the alpha position of one alkyl group attached to the amino nitrogen or a nitroxyl radical initiator having one hydrogen atom on one carbon atom in the alpha position of one alkyl group attached to the amino nitrogen.

WO 00/49027 (US 6,569,967)

Claims 1-2, 4-21, 23-26, 30-32 stand rejected 35 U.S.C. 103(a) as being unpatentable over WO 00/49027, in view of Kamath, U.S. Patent Number 4,777,230 or Solomon et al, US Patent Number 4,581,429. The WO 00/49027 application has issued in the US as US Patent Number 6,569,967 to Luc Couturier et al..

The Luc Couturier reference fails to recognize the advantageous use of the specific dialkyl alkoxymines or nitroxyl radicals for copolymers primarily formed from monomers of unsubstituted acrylic acid or esters thereof. The Luc Couturier reference teaches away from Applicant's claims by exemplifying only the formation of polystyrene. Nor would one of skill in the art arrive at Applicant's invention by routine experimentation, since the difficulty of forming a copolymer primarily formed from monomers of unsubstituted acrylic acid or esters thereof is not recognized as a result-effective factor.

The Luc Couturier patent is owned by Atofina, an affiliate of Atofina Chemicals and under common ownership by TOTAL SA. Applicant is submitting herewith a Terminal Disclaimer over the Luc Couturier reference.

The Kamath and Solomon references are secondary references cited to show that acrylic polymers may be used as coating compositions. Neither the Kamath or Solomon references describe controlled free radical polymerization using a N,N-dialkylamine initiator having one hydrogen atom on one carbon atom in the alpha position of one alkyl group attached to the amino nitrogen or a nitroxyl radical initiator having one hydrogen atom on one carbon atom in the alpha position of one alkyl group attached to the amino nitrogen.

Benoit et al., Robin et al., Sobek et al., or Lacroix-Desmazes et al.

Claims 1-32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Benoit et al., or Robin et al., or Sobek et al., or Lacroix-Desmazes et al. in view of Kamath or Solomon et al.

Benoit et al.

The Benoit reference, as described in the specification, discloses the use of a nitroxyl radical derived from an alkoxyamine to polymerize n-butyl acrylate. However, the molecular weights reported at complete conversion are too high to be useful for a high solids coating. Thus the Benoit paper does not suggest a process for preparing a material useful in a high solids coating application, as claimed by Applicant.

Robin et al.

The Robin paper also describes the use of nitroxide-mediated radical polymerization to produce a PS/BA block copolymer having an Mn of between 41,000 and 65,000. As with the polymers of the Benoit reference, polymers with molecular weights this high are not useful for a high solids coating, and therefore does not have the properties of the polymer in the process claimed by Applicant.

Sobek et al.

The Sobek reference presents a patent study of an initiator system containing an alkoxyamine on methoxycarbonyl methyl and methoxycarbonyl isopropyl radicals. There is no disclosure of using the initiator on a system containing substituted or

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unsubstituted acrylic acid, or its esters, and there is no indication of a process producing low molecular weight polymers useful in a high solids coating. One of skill in the art would not arrive at Applicant's invention based on the kinetic study of Sobek.

Lacroix-Desmazes et al.

The Lacroix-Desmazes study presents data on the polymerization of butyl acrylate using nitroxide-mediated polymerization. As seen in the graphs, the molecular weight (Mn) were well over 20,000 at full conversion. Polymers with molecular weights this high are not useful for a high solids coating, and therefore does not have the properties of the polymer in the process claimed by Applicant. This reference teaches away from Applicant's claims by describing a method for producing polymer having properties outside those claimed by Applicant.

The Kamath and Solomon references are secondary references cited to show that acrylic polymers may be used as coating compositions. Neither the Kamath or Solomon references describe controlled free radical polymerization using a N,N-dialkylamine initiator having one hydrogen atom on one carbon atom in the alpha position of one alkyl group attached to the amino nitrogen or a nitroxyl radical initiator having one hydrogen atom on one carbon atom in the alpha position of one alkyl group attached to the amino nitrogen.

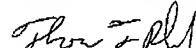
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The references cited fail to present a *prima facie* case of obviousness. For the above reasons the present claims are believed by the Applicant to be novel and unobvious over the prior art, thus the claims herein should be allowable to the Applicant. Accordingly, reconsideration and allowance are requested.

Respectfully submitted,



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